



U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT
(Use several sheets if necessary)

(PTO-1449)

ATTY. DOCKET NO.
GC571-2-C1

SERIAL NO.
10/791,628

APPLICANT
Davis et al.

FILING DATE
March 1, 2004

GROUP ART UNIT
1651-1652

REFERENCE DESIGNATION		U.S. PATENT DOCUMENTS					
EXAM'R INITIAL	DOCUMENT NUMBER	DATE	NAME	Class	Subclass	Filing Date If Appropriate	
CJ	A1 *5,403,737	04/04/95	Abrahmsen et al.				
	A2 *5,629,173	05/13/97	Abrahmsen et al.				
	A3 *5,316,935	05/31/94	Arnold et al.				
	A4 *5,208,158	05/04/93	Bech et al.				
	A5 *5,244,791	09/14/93	Estell				
CJ	A6 *5,316,941	05/31/94	Estell et al.				
CJ	A7 *5,955,340	09/21/99	Bott				

FOREIGN PATENT DOCUMENTS

EXAM'R INITIAL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	Subclass	TRANSLAT'N
CJ	B1 *EP 3 328 229 A1	08/16/89	EP			yes
	B2 *WO 91/16423	04/18/91	PCT			yes
	B3 *WO 96/27671	02/27/96	PCT			yes
	B4 *WO 97/37007	10/09/97	PCT			yes
CJ	B5 *WO 98/23732	06/04/98	PCT	C1 2N	9/00	yes

OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

CJ	C1	*Abrahmsen et al., "Engineering Subtilisin and Its Substrates for Efficient Ligation of Peptide Bonds in Aqueous Solution," <i>Biochemistry</i> , 30:4151-59 (1991)
	C2	*Akabas et al., "Acetylcholine Receptor Channel Structure Probed in Cysteine-Substitution Mutants," <i>Science</i> , 258:307-310 (1992)
	C3	*Alvear et al., "Inactivation of Chicken Liver Mevalonate 5-Diphosphate Decarboxylase by Sulfhydryl-Directed Reagents: Evidence of a Functional Dithiol," <i>Biochimica et Biophysica Acta</i> , 994:7-11 (1989)
	C4	*Barbas et al., "A Search for Peptide Ligase: Cosolvent-Mediated Conversion of Proteases to Esterases for Irreversible Synthesis of Peptides," <i>J. Am. Chem. Soc.</i> , 110:5162-66 (1988)
	C5	*Barbas, et al., "Papain Catalysed Peptide Synthesis: Control of Amidase Activity and the Introduction of Unusual Amino Acids," <i>J. Chem. Soc., Chem. Commun.</i> , 533-34 (1987)
	C6	*Bech et al., "Significance of Hydrophobic S ₄ -P ₄ Interactions in Subtilisin 309 from <i>Bacillus licheniformis</i> ," <i>Biochemistry</i> , 32:2847-2852 (1993)
CJ	C7	*Bell et al., "Kinetic Studies on the Peroxidase Activity of Selenosubtilisin," <i>Biochemistry</i> , 32:3754-3762 (1993)

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant(s).



U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT
(Use several sheets if necessary)

(PTO-1449)

ATTY. DOCKET NO.
GC571-2-C1

SERIAL NO.
10/791,628

APPLICANT
Davis et al.

FILING DATE
March 1, 2004

GROUP ART UNIT
1651 1052

OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

C8	*Berglund et al., "Altering the Specificity of Subtilisin <i>B. Lentus</i> by Combining Site-Directed Mutagenesis and Chemical Modification," <i>Bioorganic & Mechanical Chemistry Letters</i> , 6:2507-2512 (1996)
C9	*Berglund et al., "Chemical Modification of Cysteine Mutants of Subtilisin <i>Bacillus Lentus</i> Can Create Better Catalysts Than The Wild-Type Enzyme," <i>J. Am. Chem. Soc.</i> , 119:5265-5266 (1997)
C10	*Betzel et al., "Crystal Structure of the Alkaline Proteinase Savinase™ from <i>Bacillus lentus</i> at 1.4 Å Resolution," <i>J. Mol. Biol.</i> , 223:427-445(1992)
C11	*Bodwell et al., "Sulphydryl-Modifying Reagents Reversibly Inhibit Binding of Glucocorticoid-Receptor Complexes to DNA-Cellulos," <i>Biochemistry</i> , 23:1392-1398 (1984)
C12	*Bonneau et al., "Alteration of the Specificity of Subtilisin BPN' by Site-Directed Mutagenesis in its S ₁ and S _{1'} Binding Sites," <i>J. Am. Chem. Soc.</i> , 113:1026-30 (1991)
C13	*Brocklehurst, "Specific Covalent Modification of Thiols: Applications in the Study of Enzymes and Other Biomolecules," <i>Int. J. Biochem.</i> , 10:259-274 (1979)
C14	*Bruice et al., "Novel Alkyl Alkanethiolsulfonate Sulphydryl Reagents. Modification of Derivatives of L-Cysteine," <i>Journal of Protein Chemistry</i> , 1:47-58 (1982)
C15	*Buckwalter et al., "Improvement in the Solution Stability of Porcine Somatotropin by Chemical Modification of Cysteine Residues," <i>J. Agric. Food Chem.</i> , 40:356-362 (1992)
C16	*Chen et al., "Incorporation of Unnatural Amino Acid Derivatives into a Peptide Bond via an Oxime Ester Catalysed By Papain or Lipase," <i>Chem. Commun.</i> , 165-66 (1996)
C17	*Chen et al., "Kinetically Controlled Peptide Bond Formation in Anhydrous Alcohol Catalyzed by the Industrial Protease Alcalase," <i>J. Org. Chem.</i> , 57:6960-65 (1992)
C18	*Chen et al., "Probing the S-1' Subsite Selectivity of an Industrial Alkaline Protease in Anhydrous t-Butanol," <i>Bioorganic & Medicinal Chemistry Letters</i> , 3(4):727-33 (1993)
C19	*Daly et al., "Formation of Mixed Disulfide Adducts at Cysteine-281 of the Lactose Repressor Protein Affects Operator and Inducer Binding Parameters," <i>Biochemistry</i> , 25:5468-5474 (1986)
C20	*Davies et al., "A Semisynthetic Metalloenzyme Based on a Protein Cavity That Catalyzes the Enantioslective Hydrolysis of Ester and Amide Substrates," <i>J. Am. Chem. Soc.</i> , 119:11643-11652 (1997)
C21	*Davis, B.G., et al., "Glycosyldisulfides: a new class of solution and solid phase glycosyl donors," <i>Chem. Commun.</i> , 2001, pp.189-190
C22	*Davis, Benjamin G., et al., "The Controlled Glycosylation of a Protein with a Bivalent Glycan: Towards a New Class of Glycoconjugates, Glycodendripoteins," <i>Chem. Commun.</i> , 2001, pp. 351-352
C23	*DeSantis et al., "Chemical Modifications at a Single Site Can Induce Significant Shifts in the pH Profiles of a Serine Protease," <i>J. Am Chem. Soc.</i> , 120:8582-8586 (1998)
C24	*DeSantis, et al., "Probing the altered specificity and catalytic properties of mutant usbtillisn chemically modified at position S156C and S166C in the S1 pocket," <i>Bioorganic And Medicinalehcmistry</i> , 7:7, pp. 1381-1387, (1999)

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant(s).



U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT
(Use several sheets if necessary)

ATTY. DOCKET NO.
GC571-2-C1

SERIAL NO.
10/791,628

APPLICANT
Davis et al.

FILING DATE
March 1, 2004

GROUP ART UNIT
1651 1652

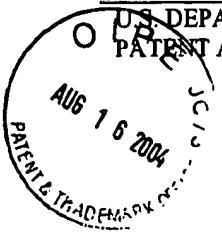
OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

C25	*Di Bello, "Total Synthesis of Proteins by Chemical Methods: The Horse Heart Cytochrome C Example," <u>Gazzetta Chimica Italiana</u> , 126:189-197 (1996)
C26	*Dickman, M., et al., "Chemically modified mutants of subtilisin bacillus lentinus catalyze transesterification reactions better than wild type," <u>Tetrahedron Asymmetry</u> , (11. Dec. 1998) 9/23 4099-4102, XPO000901276.
C27	*Dime, DS., "Protein Topology and Ion Channel Research," Toronto Research Chemicals, Inc. (catalog date unknown)
C28	*Ekberg et al., "Enzymatic Coupling of Two D-Amino Acid Residues in Aqueous Media," <u>Tetrahedron Letters</u> , 30(5):583-86 (1989)
C29	*Engler et al., "Critical Functional Requirement for the Guanidinium Group of the Arginine 41 Side Chain of Human Epidermal Growth Factor as Revealed by Mutagenic Inactivation and Chemical Reactivation," <u>The Journal of Biological Chemistry</u> , 267:2274-2281 (1992)
C30	*Frillingos et al., "Cysteine-Scanning Mutagenesis of Helix II and Flanking Hydrophilic Domains in the Lactose Permease of <i>Escherichia coli</i> ," <u>Biochemistry</u> , 36:269-273 (1997)
C31	*Gloss et al., "Examining the Structural and Chemical Flexibility of the Active Site Base, Lys-258, of <i>Escherichia coli</i> Aspartate Aminotransferase by Replacement with Unnatural Amino Acids," <u>Biochemistry</u> , 34:12323-12332 (1995)
C32	*Graycar et al., "Altering the Proteolytic Activity of Subtilisin through Protein Engineering," <u>Annals New York Academy of Science</u> , 672:71-79 (1992)
C33	*Gron et al., "A Highly Active and Oxidation-Resistant Subtilisin-Like Enzyme Produced by a Combination of Site-Directed Mutagenesis and Chemical Modification," <u>Eur. J. Biochem.</u> , 194:897-901 (1990)
C34	*Gron et al., "Extensive Comparison of the Substrate Preferences of Two Subtilisins As Determined with Peptide Substrates Which Are Based on the Principle of Intramolecular Quenching," <u>Biochemistry</u> , 31(26):6011-18 (1992)
C35	*Hempel et al., "Selective Chemical Modification of Human Liver Aldehyde Dehydrogenases <i>E</i> ₁ and <i>E</i> ₂ by Iodoacetamide," <u>The Journal of Biological Chemistry</u> , 256:10889-10896 (1981)
C36	*Hilvert et al., "A Highly Active Thermophilic Semisynthetic Flavoenzyme," <u>J. Am. Chem. Soc.</u> , 110:682-689 (1988)
C37	*Hilvert et al., "New Semisynthetic Flavoenzyme Based on a Tetrameric Protein Template, Glyceraldehyde-3-Phosphate Dehydrogenase," <u>J. Am. Chem. Soc.</u> , 107:5805-5806 (1985)
C38	*House et al., " ¹ H NMR Spectroscopic Studies of Selenosubtilisin," <u>Biochemistry</u> , 32:3468-3473 (1993)
C39	*Huang et al., "Improving the Activity of Immobilized Subtilisin by Site-Specific Attachment to Surfaces," <u>Anal. Chem.</u> , 69:4601-4607 (1997)
C40	*Jonsson et al., "Temperature Effects on Protease Catalyzed Acyl Transfer Reactions in Organic Media," <u>Journal of Molecular Catalysis B: Enzymatic</u> , 2:43-51 (1996)

EXAMINER

DATE CONSIDERED

EXAMINER: Initial reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant(s).



U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT
(Use several sheets if necessary)

(PTO-1449)

ATTY. DOCKET NO.
GC571-2-C1

SERIAL NO.
10/791,628

APPLICANT
Davis et al.

FILING DATE
March 1, 2004

GROUP ART UNIT
1651 / 652

OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

C41	*Kaiser, "Catalytic Activity of Enzymes Altered at Their Active Sites," <u>Agnew. Chem. Int. Ed. Engl.</u> , 27:913-922 (1988)
C42	*Kanaya et al., "Role of Cysteine Residues in Ribonuclease H from <i>Escherichia coli</i> ," <u>Biochem. J.</u> , 271:59-66 (1990)
C43	*Kato et al., "First Stereoselective Synthesis of D-Amino Acid N-Alkyl Amide Catalyzed by D-Aminopeptidase," <u>Tetrahedron</u> , 45(18) 5743-54 (1989)
C44	*Kawase et al., "Effect of Chemical Modification of Tyrosine Residues on Activities of Bacterial Lipase," <u>Journal of Fermentation and Bioengineering</u> , 72:317-319 (1991)
C45	*Kawashiro et al., "Effect of Ester Moiety of Substrates on Enantioselectivity of Protease Catalysis in Organic Media," <u>Biochemistry Letters</u> , 18(12):1381-86 (1996) <i>(Biochemistry)</i>
C46	*Kenyon et al., "Novel Sulfhydryl Reagents," <u>Methods Enzymol.</u> , 47:407-450 (1977)
C47	*Kirley, "Reduction and Fluorescent Labeling of Cyst(e)ine-Containing Proteins for Subsequent Structural Analyses," <u>Analytical Biochemistry</u> , 180:231-236 (1989)
C48	*Kluger et al., "Amino Group Reactions of the Sulfhydryl Reagent Methyl Methanesulfonothioate. Inactivation of D-3-hydroxybutyrate Dehydrogenase and Reaction with Amines in Water," <u>Can. J. Biochem.</u> , 58:629-632 (1980)
C49	*Kokubo et al., "Flavohemoglobin: A Semisynthetic Hydroxylase Acting in the Absence of Reductase," <u>J. Am. Chem. Soc.</u> , 109:606-607 (1987)
C50	*Konigsberg, "Reduction of Disulfide Bonds in Proteins with Dithiothreitol," <u>Methods in Enzymology</u> , 25:185-188 (1972)
C51	*Kuang et al., "Enantioselective Reductive Amination of α -Amino Acids by a Pyridoxamine Cofactor in A Protein Cavity," <u>J. Am. Chem. Soc.</u> , 118:10702-10706 (1996)
C52	*Lewis et al., "Determination of Interactive Thiol Ionizations in Bovine Serum Albumin, Glutathione, and Other Thiols by Potentiometric Difference Titration," <u>Biochemistry</u> , 19:6129-6137 (1980)
C53	*Liu et al., "Site-Directed Fluorescence Labeling of P-Glycoprotein on Cysteine Residues in the Nucleotide Binding Domains," <u>Biochemistry</u> , 35:11865-11873 (1996)
C54	*Margolin et al., "Incorporation of D-Amino Acids into Peptides via-Enzymatic Condensation in Organic Solvents," <u>J. Am. Chem. Soc.</u> , 109:7885-87 (1987)
C55	*Margolin et al., "Peptide Synthesis Catalyzed by Lipases in Anhydrous Organic Solvents," <u>J. Am. Chem. Soc.</u> , 109:3802-04 (1987)
C56	*Miller et al., "Peroxide Modification of Monoalkylated Glutathione Reductase," <u>The Journal of Biological Chemistry</u> , 266:19342-19360 (1991)
C57	*Morea et al., "Exploitation of Subtilisin BPN as Catalyst for the Synthesis of Peptides Containing Noncoded Amino Acids, Peptide Mimetics and Peptides Conjugates," <u>J. Am. Chem. Soc.</u> , 119:3942-47 (1997)
C58	*Morihara et al., " α -Chymotrypsin as the Catalyst for Peptide Synthesis," <u>Biochem. J.</u> , 163:531-42 (1977)

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant(s).



U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT
(Use several sheets if necessary)

(PTO-1449)

ATTY. DOCKET NO.
GC571-2-C1

SERIAL NO.
10/791,628

APPLICANT
Davis et al.

FILING DATE
March 1, 2004

GROUP/ART UNIT
1651/652

OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

C59	*Nakatsuka et al., "Peptide Segment Coupling Catalyzed by the Semisynthetic Enzyme Thiolsubtilisin," <u>J. Am. Chem. Soc.</u> , 109:3808-10 (1987)
C60	*Nakayama et al., "Chemical Modification of Cysteinyl, Lysyl and Histidyl Residues of Mouse Liver 17 β -Hydroxysteroid Dehydrogenase," <u>Biochimica et Biophysica Acta</u> , 1120:144-150 (1992)
C61	*Neet, K.E. and Koshland, D.E., "The Conversion of Serine at the Active Site of Subtilisin to Cysteine: A 'Chemical Mutation,'" <u>Proc. Nat. Acad. Sci. USA</u> , 56(5):1606-1611. (1966)
C62	*Nishimura et al., "Reversible Modification of the Sulfhydryl Groups of <i>Escherichia coli</i> Succinic Thiokinase with Methanethiolating Reagents, 5,5'-Dithio-bis(2-Nitrobenzoic Acid), p-Hydroxymercuribenzoate, and Ethylmercurithiosalicylate," <u>Archives of Biochemistry and Biophysics</u> , 170:461-467 (1975)
C63	*O'Connor et al., "Probing an Acyl Enzyme of Selenosubtilisin by Raman Spectroscopy," <u>J. Am. Chem. Soc.</u> , 118:239-240 (1996)
C64	*Pardo et al., "Cysteine 532 and Cystein 545 Are the N-Ethylmaleimide-Reactive Residues of the <i>Neurospora</i> Plasma Membrane H ⁺ -ATPase," <u>The Journal of Biological Chemistry</u> , 264:9373-9379 (1989)
C65	*Peterson et al., "Nonessential Active Site Residues Modulate Selenosubtilisin's Kinetic Mechanism," <u>Biochemistry</u> , 34:6616-6620 (1995)
C66	*Peterson et al., "Selenosubtilisin's Peroxidase Activity Does Not Require an Intact Oxyanion Hole," <u>Tetrahedron</u> , 53:12311-12317 (1997)
C67	*Planas et al., "Reengineering the Catalytic Lysine of Aspartate Aminotransferase by Chemical Elaboration of a Genetically Introduced Cysteine," <u>Biochemistry</u> , 30:8268-8276 (1991)
C68	*Plettner, E., et al., "Modulation of Esterase and Amidase Activity of Subtilisin Bacillus Lentus by Chemical Modification of Cysteine Mutants," <u>Journal of the American Chemical Society</u> , (2 Jun. 1999) 121/21, 4977-4981, XPO000891274.
C69	*Plettner, Erika et al., "A Combination Approach to Chemical Modification of Subtilisin Bacillus Lentus," <u>Bioorganic & Medicinal Chemistry Letters</u> (Sept. 8, 1998) Vol. 8, No. 17, pp. 2291-2296, XP000413820 (Plettner, 901)
C70	*Polgar et al., "A New Enzyme Containing a Synthetically Formed Active Site. Thiol-Subtilisin," <u>Journal of American Chemical Society</u> , 88:3153-3154 (1966)
C71	*Polgar, "Spectrophotometric Determination of Mercaptide Ion, an Activated Form of SH-Group in Thiol Enzymes," <u>FEBS Letters</u> , 38:187-190 (1974)
C72	*Presenting Our Line of MTS Compounds," Toronto Research Chemicals Inc. (catalog, date unknown)
C73	*Radziejewski et al., "Catalysis of N-Alkyl-1,4-Dihydronicotinamide Oxidation by a Flavopapain: Rapid Reaction in All Catalytic Steps," <u>J. Am. Chem. Soc.</u> , 107:3352-3354 (1985)
C74	*Raia et al., "Activation of <i>Sulfolobus Solfataricus</i> Alcohol Dehydrogenase by Modification of Cysteine Residue 38 with Iodoacetic Acid," <u>Biochemistry</u> , 35:638-647 (1996)

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant(s).



U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT
(Use several sheets if necessary)

(PTO-1449)

ATTY. DOCKET NO.
GC571-2-C1

SERIAL NO.
10/791,628

APPLICANT
Davis et al.

FILING DATE
March 1, 2004

GROUP ART UNIT
d651 652

OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

C75	*Ramachandran et al., "Stabilization of Barstar by Chemical Modification of the Buried Cysteines," <u>Biochemistry</u> , 35:8776-8785 (1996)
C76	*Roberts et al., "Reactivity of Small Thiolate Anions and Cysteine-25 in Papain Toward Methyl Methanethiosulfonate," <u>Biochemistry</u> , 25:5595-5601 (1986)
C77	*Rokita et al., "Synthesis and Characterization of a New Semisynthetic Enzyme, Flavolysozyme," <u>J. Am. Chem. Soc.</u> , 108:4984-4987 (1986)
C78	*Sears et al., "Engineering Enzymes for Bioorganic Synthesis. Peptide Bond Formation," <u>Biotechnolo. Prog.</u> , 12:423-33 (1996)
C79	*Sears et al., "Engineering Subtilisin for Peptide Coupling: Studies on the Effects of Counterions and Site-Specific Modifications on the Stability and Specificity of the Enzyme," <u>J. Am. Chem Soc.</u> , 116:6521-30 (1994)
C80	*Siddiqui et al., "Arthrobacter D-Xylose Isomerase: Chemical Modification of Carboxy Groups and Protein Engineering Of pH Optimum," <u>Biochem. J.</u> , 295:685-691 (1993)
C81	*Smith et al., "An Engineered Change in Substrate Specificity of Ribulosebisphosphate Carboxylase/Oxygenase," <u>The Journal of Biological Chemistry</u> , 265:1243-1245 (1990)
C82	*Smith et al., "Chemical Modification of Active Site Residues in γ -Glutamyl Transpeptidase," <u>The Journal of Biological Chemistry</u> , 270:12476-12480 (1995)
C83	*Smith et al., "Nonessentiality of the Active Sulphydryl Group of Rabbit Muscle Creatine Kinase," <u>The Journal of Biological Chemistry</u> , 249:3317-3318 (1974)
C84	*Smith et al., "Restoration of Activity to Catalytically Deficient Mutants of Ribulosebisphosphate Carboxylase/Oxygenase by Aminoethylation," <u>The Journal of Biological Chemistry</u> , 263:4921-4925 (1988)
C85	*Smith et al., "Simple Alkanethiol Groups for Temporary Blocking of Sulphydryl Groups of Enzymes," <u>Biochemistry</u> , 14:766-771 (1975)
C86	*Smith et al., "Subtle Alteration of the Active Site of Ribulose Bisphosphate Carboxylase/Oxygenase by Concerted Site-Directed Mutagenesis and Chemical Modification," <u>Biochemical and Biophysical Research Communications</u> , 152:579-584 (1988)
C87	*So et al., "Lipase-Catalyzed Synthesis of Peptides Containing D-Amino Acid," <u>Enzyme Microb. Technol.</u> , 23:211-15 (1998)
C88	*Soper et al., "Effects of Substrates on the Selectie Modification of the Cysteinyl Residues of D-Aminio Acid Transaminase," <u>The Journal of Biological Chemistry</u> , 254:10901-10905 (1979)
C89	*Spura, A., et al., "Probing the Agonist Domain of the Nicotinic Acetylcholine Receptor by Cysteine Scanning Mutagenesis Reveals Residues in Proximity to the alpha-Bungarotoxin Binding Site," <u>Biochemistry</u> , 38:16, pp. 4912-4921, (20 April 1999)
C90	*Stauffer et al., "Electrostatic Potential of the Acetylcholine Binding sites in the Nicotinic Receptor Probed by Reactions of Binding-Site Cysteines with Charged Methanethiosulfonates," <u>Biochemistry</u> , 33:6840-6849 (1994)

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant(s).

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO.

SERIAL NO.

GC571-2-C1

10/791,628

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT
(Use several sheets if necessary)

O I P E JCT
AUG 16 2004

(PTO-1449)

APPLICANT

Davis et al.

FILING DATE

March 1, 2004

GROUP ART UNIT

1654 (652)

OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

✓ C91	*Stepanov, "Proteinases as Catalysts in Peptide Synthesis," <u>Pure & Appl. Chem.</u> , 68(6):1335-39 (1996)
✓ C92	*Stewart et al., "Catalytic Oxidation of Dithiols by a Semisynthetic Enzyme," <u>J. Am. Chem. Soc.</u> , 108:3480-3483 (1986)
✓ C93	*Suckling et al., "Carbon-Carbon Bond Formation Mediated by Papain Chemically Modified by Thiazolium Salts," <u>Bioorganic & Medicinal Chemistry Letters</u> , 3:531-534 (1993)
✓ C94	*Svensson et al., "Mapping the Folding Intermediate of Human Carbonic Anhydrase II. Probing Substructure by Chemical Reactivity and Spin and Fluorescence Labelling of Engineered Cysteine Residues," <u>Biochemistry</u> , 34:8606-8620 (1995)
✓ C95	*Valenzuela et al., "Kinetic Properties of Succinylated and Ethylenediamine-Amidated δ-Chymotrypsins," <u>Biochim. Biophys. Acta</u> , 250:538-548 (1971)
✓ C96	*Wang et al., "Enzymes in Organic Synthesis: use of Subtilisin and a Highly Stable Mutant Derived from Ulitple Site-Specific Mutations," <u>J. Am. Chem. Soc.</u> , 112:945-53 (1990)
✓ C97	*Watanabe, et al., "A Unique Enzyme from <i>Saccharothrix</i> sp. Catalyzing D-Amino Acid Transfer," <u>Biochimica et Biophysica Acta</u> , 1337:40-46 (1997)
✓ C98	*West et al., "Enzyme-catalysed Synthesis of Peptides Containing D-Amino Acids, <u>J. Chem. Soc. Chem. Commun.</u> , pp 417-18 (1986)
✓ C99	*West et al., "Enzyme-Catalyzed Irreversible Formation of Peptides Containing D-Amino Acids," <u>J. Org. Chem.</u> , 51:2728-35 (1986)
✓ C100	*West et al., "Enzymes as Synthetic Catalysts: Mechanistic and Active-Site Considerations of Natural and Modified Chymotrypsin," <u>J. Am. Chem. Soc.</u> , 112:5313-5320 (1990)
✓ C101	*West et al., "Modification of Proteases to Esterases for Peptide Synthesis: Methylchymotrypsin," <u>J. Am. Chem. Soc.</u> , 110:3709-10 (1988)
✓ C102	*White et al., "Sequential Site-Directed Mutagenesis and Chemical Modification to Convert the Active Site Arginine 292 Of Aspartate Aminotransferase to Homoarginine," <u>Journal of the American Chemical Society</u> , 114:292-293 (1992)
✓ C103	*Worku et al., "Identification of Histidyl and Cysteinyl Residues Essential for Catalysis of 5'-Nucleotidase," <u>FEBS Letter</u> , 167:235-240 (1984)
✓ C104	*Wu et al., "Conversion of a Protease into an Acyl Transferase: Selenolsubtilisin," <u>J. Am. Chem. Soc.</u> , 111:4514-4515 (1989)
✓ C105	*Wynn et al., "Chemical Modification of Protein Thiols: Formation of Mixed Disulfides," <u>Methods in Enzymology</u> , 251:351-356 (1995)
✓ C106	*Wynn et al., "Comparison of Straight Chain and Cyclic Unnatural Amino Acids Embedded in the Core of Staphylococcal Nuclease," <u>Protein Science</u> , 6:1621-1626 (1997)
✓ C107	*Wynn et al., "Mobile Unnatural Amino Acid Side Chains in the Core of Staphylococcal Nuclease," <u>Protein Science</u> , 5:1026-1031 (1996)
✓ C108	*Wynn et al., "Unnatural Amino Acid Packing Mutants of <i>Escherichia Coli</i> Thioredoxin Produced by Combined Mutagenesis/Chemical Modification Techniques," <u>Protein Science</u> , 2:395-403 (1993)

EXAMINER

DATE CONSIDERED

EXAMINER: Initial reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant(s).

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO. GC571-2-C1	SERIAL NO. 10/791,628
AUG 16 2004 <i>PATENT & TRADEMARK OFFICE</i>	INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary)	APPLICANT Davis et al.	
(PTO-1449)		FILING DATE March 1, 2004	GROUP ART UNIT 1651/652

OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

<i>CJY</i>	C109	*Xu et al., "Amino Acids Lining the Channel of the γ -Am inobutyric Acid Type A Receptor Identified by Cysteine Substitution," <u>The Journal of Biological Chemistry</u> , 268:21505-21508 (1993)
<i>CJY</i>	C110	*Zhang et al., "Protease-catalyzed Small Peptide Synthesis in Organic Media, <u>Enzyme Microb. Technol.</u> , 19:538-44 (1996)

EXAMINER <i>C. M. Miller</i>	DATE CONSIDERED <i>4/25/06</i>
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant(s).	